

NOTES ON THE *LUZULA SPICATA* COMPLEX IN TURKEY

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Boissier (1884) mentions only one species of the *L. spicata* complex from the territory of Turkey and Buchenau (1906) concurs with this opinion. Recent collections have altered this situation. This short study is the result of an analysis of herbarium material, kindly loaned to us by the Royal Botanic Garden, Edinburgh.

When revising the herbarium material of the *L. spicata* complex, we found that the Balkan populations (from the S.E. part of the Balkan peninsula) and the populations of Asia Minor differ from the other European plants above all by the length of their anthers and by the relative lengths of the anthers and filaments. We named these populations of the Balkan and of Asia Minor, growing in Yugoslavia, Albania, Greece, Bulgaria, and Turkey, *L. bulgarica* (Chrtek & Křisa, 1962). We then divided the species *L. bulgarica* into two subspecies—subsp. *bulgarica* and subsp. *pindica* (Hausskn.) Chrtek et Křisa. On the basis of further study of the herbarium material we have come to the conclusion that it would be advantageous to raise these subspecies to the rank of independent species.

From Asia Minor we have recorded only the subspecies *bulgarica* of *L. bulgarica*. After our revision of the Edinburgh material we are able to add the following.

1. *Luzula spicata* (L.) DC. subsp. *spicata*

TURKEY: Amasia, in montis Ak-dagh regione alpina, alt. 16–1900 m., 9 Jul. 1889, *J. Bornmüller*; PROV. TRABZON: Bayburt—Of, 3 km. N. of pass top, alt. 2400 m., 11 Jul. 1960, *Stainton et Henderson*, no. 6177.

It is very likely that only the typical subspecies grows in Turkey, and that it reaches into this region from the mountain massifs of the Caucasus. In Europe it is also spread in the mountainous regions of Scandinavia, northern Britain, in the Atlas, in the Alps mountains, in the Massif Central and in the arctic regions of the Soviet Union.

2. *Luzula bulgarica* Chrtek & Křisa

TURKEY: Paphlagonia, Wilajet Kastambuli, Tossia, Giaurdagh, in pratis alpinis, 17 May 1892, *P. Sintenis*: Iter orientale 1892, no. 3929; Prov. Kastamonu: Ilgaz Dağ, 6600 ft., pasture in *Abietum*, 6 June 1954, *Davis* no. 21571; Bursa: slopes of Ulu dag below summit, 2180–2440 m., 19 June 1956, *H. E. Moore*, no. 7269. Bithynia, Olympus, in pasc. alpinis, 1700 m., 27 May 1899, *J. Bornmüller*: Iter Anatolicum tertium 1899, no. 5611.

The area of the species *L. bulgarica* is limited to the mountain ranges of the S.E. Balkan peninsula and to Turkey. Very likely it does not spread to the neighbouring Caucasus.

3. *Luzula pindica* (Hausskn.) Chrtek & Křisa, **comb. nova**

BAS.: *Luzula spicata* β *pindica* Haussknecht in Mitteil. Thür. Bot. Verein 13-14, 33, Weimar, 1899.

L. bulgarica subsp. *pindica* (Hausskn.) Chrtek & Křisa in Bot. Not. 115, (3), 308 (1962).

Luzula pindica differs from the preceding species by its total habit, by its stem leaves, which are broad and grow perpendicularly from the stem, by capsule-segments, up to 3.1 mm. long and by seeds up to 2.0 mm. long. The area of this species is also limited to the mountain ranges of the S.E. part of the Balkan peninsula, and its occurrence in Turkey is possible.

Apart from the above-mentioned species we found in the herbarium material collections of Davis and O. Polunin from Turkey yet others belonging *L. spicata* complex. We evaluate these plants as a new species, *Luzula turcica*.

Luzula turcica Chrtek & Křisa, **species nova**

Planta perennis, dense caespitosa; *caules* erecti, plerumque 5-12 cm. alti, firmi, satis crassi; *folia* 1-3.5 cm. longa, \pm 2 mm. lata, glabra, subcanaliculata, subcarnosa; *folia caulina* (plerumque 1) 0.8-1.5 cm. longa, glabra, subcanaliculata; *inflorescentia densa*, 5-8 mm. longa, 6-7 mm. lata, rotundata, erecta, multiflora; *bracteae infimae* (plerumque 1) inflorescentiam subaequantes vel inflorescentia breviores; *tepala* invicem \pm aequilonga, 2.5-3 mm. longa, 1.5 mm. lata, lanceolata, tenuissime aristato-acuminata, obscuro-castanea, apicem versus anguste brunneo-membranacea; *bracteae florales* \pm aequilongae vel breviores, membranaceae, lacerato-laciniae; *antherae* 0.8-1.1 mm. longae; *fructus* trigono-sphaerici, brevissime mucronati, 1.7-2.0 mm. longi, obscuro-brunnei, tepalis breviores; *semina* 1.1-1.3 mm. longa, fusca vel brunnea, breviter carunculata.

Typus: Turkey. Prov. Bitlis: Suphan Dağ, above Adilcevaz, 13,300 ft. Moist stony hollows (volcanic) near snow, rare, 26 Aug. 1954, Davis & Polunin (D. 24665—holo. E).

L. turcica differs from the closely related species of the range of *L. spicata* by the erect and not overhanging inflorescence. From *L. pseudo-sudetica* Krečetovič, which is also recorded from Turkey, it differs above all by its low growth, by its short, tough, grooved coiled leaves, by its dense, spherical inflorescence, by its longer anthers, and by its somewhat larger seeds.

L. turcica may extend to other alpine localities of eastern Turkey, and even its occurrence in the Caucasus is not excluded.

In conclusion it may be said that the species of the relationship of *L. spicata* require further thorough study.

REFERENCES

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TURKISH ITINERARIES: III

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Since Dr. P. H. Davis published his *Turkish Itineraries*, II (Notes Roy. Bot. Gard. Edinb., 22, 583-586 (1958)), further expeditions have been to Turkey, of which two have been considered sufficiently extended to merit publication. The earlier was made by J. D. A. Stainton and D. M. Henderson, collecting principally in the north-east and south—only once crossing west of longitude 35° E., although Henderson collected a few cryptogams along main roads on his (somewhat devious) return from Trabzon at the end of the expedition. The second expedition, in 1962, was in two parts; T. R. Dudley collecting in May and June mainly in west, south and central Turkey, and P. H. Davis and M. Coode collecting in June, July and August in the north and north-west, only crossing longitude 35° E. at Sinop. Both expeditions were equipped with Land-Rovers.

The 1962 expedition was made financially possible by grants from the Royal Society, North Atlantic Treaty Organisation (Scientific Affairs Division), Australian Commonwealth Scientific and Industrial Research Organisation, the University of Edinburgh, the Godman Exploration Fund, the Royal Geographic Society and the Arnold Arboretum. We wish to thank all these sources for their support. The expedition owes a debt of gratitude to Professor Hayrettin Kayacik (Forest Faculty, University of Istanbul) and the Turkish Forestry Service (Orman İşletmesi) for putting every facility at our disposal. Our thanks are also due to Dr. Faik Yaltirik for accompanying us on part of our journey, for help in collecting tree material, and for much assistance in Istanbul.

The material of the two expeditions (about 6,600 numbers) is being worked out systematically during the preparation of the "Flora of Turkey" edited by Dr. Davis and assisted by a grant from the Department of Scientific and Industrial Research. The cryptogams are being identified by Mr. D. M. Henderson of the Royal Botanic Garden, Edinburgh.

In the following account of the journeys, the numbers in brackets refer to numbering on the accompanying map.

1960

Stainton started on his own. His numbers: 8101-8484, from 30 March to 29 May. First set at Edinburgh.

March 30: Trabzon—Maçka—Trabzon. 31: Trabzon—along Rize road.
April 2: Trabzon—Maçka—Trabzon. 3: Trabzon—Sumelas Monastery (52). 5: Trabzon—Rize. 9 & 10: Trabzon. 11: Trabzon—Rize—Ikizdere. 12: İkizdere—Rize—Hopa—Artvin. 16: Artvin—Borçka. 17: Murgul (53). 18: Borçka. 19: Artvin—Yusufeli—Erzurum—Bayburt. 20: Bayburt—Gümüşane. 21: Gümüşane—Zigana (54). 24: Trabzon—Maçka—